

LXIX.—On a new Toad, *Cophophryne alticola*, collected on the Mt. Everest Reconnaissance Expedition, 1921. By JOAN B. PROCTER, F.Z.S.

THREE species representing Reptilia and Batrachia were collected by Dr. A. F. R. Wollaston on the Mt. Everest Reconnaissance Expedition—specimens of the Agamoid lizard *Phrynocephalus theobaldi*, the frog *Rana* (*Nanorana*) *pleskei*, and a new and interesting toad of the genus *Cophophryne*. All were met with at altitudes of 14,000 to 17,000 feet, and possess the degenerate ears adapted to these heights, the tympanum being either hidden beneath thick skin or absent altogether.

The new species of *Cophophryne* may be easily distinguished from *C. sikkimensis*, Blyth, to which it is closely allied, by the fact that the toes are fully webbed instead of nearly free. It is described from a single female specimen, somewhat shrivelled up—in this case a useful condition, however, revealing the immensely dilated sacral diapophyses and strongly curved præcoracoids, so suggestive of *Pelobates*, which the genus so closely resembles.

Cophophryne alticola, sp. n.

Habit as in *C. sikkimensis*, Blyth.

Head moderate, broader than long, depressed; snout rounded; canthus rostralis rounded, loreal region very oblique; nostrils small, near tip of snout; interorbital space about as broad as upper eyelid; no tympanum, eustachian tubes vestigial.

Fingers moderate, first and second subequal; third about once and a half length of snout.

Hind limb moderate, tibio-tarsal articulation reaching posterior corner of eye; tibia goes twice and three-fifths in total length, and is about three and a half times as long as broad; toes moderate, with narrow webs reaching the tips of first and second toe, base of distal phalanx of third and fifth, and penultimate of fourth; subarticular tubercles absent; a very small oval inner metatarsal tubercle; tarsal fold absent (?) (*vide* text-fig. 1).

Skin covered with small roundish porous warts, arranged in irregular longitudinal series. Narrow indistinct glandular fold or paratoid behind each eye. Abdomen granular; throat and chest smooth; mammæ-like glands, one on each side of chest.

Uniform greyish brown above; warts darker; lighter beneath.

A single female specimen, caught in the Kharta Valley, Tibet; altitude 16,500 feet.

The stomach was entirely full of black weevils of the family Curculionidæ. According to Dr. Marshall, who has

Fig. 1.



Foot of *Cophophryne alticola*. $\times 1\frac{1}{2}$.

examined these specimens, new species of *Heteronyx* and *Dactylotus* are present; but, as they are partially digested, their condition is not good enough to admit of their being described.

On examining all the specimens of *Cophophryne sikkimensis* and *Aelurophryne mammata* in the British Museum, it is now clear that they are not generically distinct. The tongue, which is described as nicked in the former and entire in the latter, may be very slightly nicked or entire in either species, and the eustachian tubes are vestigial and the tympanum absent in both (*vide* text-fig. 2). The reason why these orifices appear larger in Günther's specimens of "*Bufo mammata*," the types of the species on which the genus *Aelurophryne* was founded, is that these specimens are in an advanced state of decomposition, and the bony openings are therefore no longer padded and obscured by the usual buccal linings. The choanae, on the other hand, are somewhat larger in *A. mammata* than in *C. sikkimensis* or *C. alticola*.

Aelurophryne must therefore be regarded as a synonym of *Cophophryne*, which will now consist of three species.

Fig. 2.

Cophophryne sikkimensis.*Aelurophryne mammata.**C. alticola*

- a, b, c. Tongues of *Cophophryne sikkimensis*.
 e, f, g. " " *Aelurophryne mammata*.
 i. " " *C. alticola*, sp. n.
 d. Palate of *C. sikkimensis*.
 h. " " *A. mammata*.
 j. " " *C. alticola*.

× 1½.

COPHOPHRYNE, Blgr.

Bombinator, part., Blyth, Journ. As. Soc. Bengal, xxiii. 1854, p. 300.

Scutiger (non Latr.), Theobald, Cat. Rept. As. Soc. Mus. 1868, p. 83.

Bufo, part., Gthr. Ann. Mus. Zool. St. Pétersb. 1896, p. 188; Anders.

P. Z. S. 1871, p. 204.

Cophophryne, Blgr. Ann. & Mag. Nat. Hist. 1887, ser. 5, xx. p. 406.

Aelurophryne, Blgr. Rec. Ind. Mus. xvi. 1919, p. 479.

Habit as in *Bufo viridis*. Pupil vertical. Tongue oval, free, sometimes slightly nicked behind. Eustachian tubes

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scarcely visible; no tympanum. Fingers free; toes free or webbed, the tips not dilated; outer metatarsals united.

No maxillary teeth. Omosternum cartilaginous; sternum with slender bony style; præcoracoids strongly curved. Sacral diapophyses immensely dilated; urostyle monocondylous.

All three species possess a pair of mammæ-like pectoral glands, in which, together with the vertical pupil, absence of teeth, pectoral and pelvic characters, the genus resembles *Ophryophryne*. The latter genus may, however, be readily distinguished by its well-developed tympanum and pug-like physiognomy.

Key to Species.

- I. Choanæ very small; toes free *sikkimensis*.
 II. Choanæ moderate.
 a. Abdomen smooth; toes free or nearly free *mammata*.
 b. Abdomen granular; toes $\frac{1}{2}$ webbed *alticola*.

At the present time there are, therefore, two allied genera connecting Bufonidæ and Pelobatidæ, but regarded until recently as belonging to the former family on account of the absence of teeth. These are *Cophophryne*, Blgr., and *Ophryophryne*, Blgr. In 1919 Mr. Boulenger (in describing *Aelurophryne*) remarks:—"As I am more and more losing faith in the importance of the presence or absence of teeth as a family character, I would suggest an alteration of the definition of Pelobatidæ so as to include these toothless forms. Although the definition will then be very vague indeed, the group will at least be expressive of the natural affinities of its constituents, which may be described as lowly forms approaching the Discoglossidæ, and leading, on the one hand, to the Cystignathidæ (through *Batrachopsis*) and, on the other, to the Bufonidæ."

As long as Pelobatidæ is maintained as distinct from Bufonidæ, this must certainly be the case, for the strongly curved præcoracoids, monocondylous urostyle, and enormously dilated sacral diapophyses place these genera much nearer to *Pelobates** and *Megalophrys* than to *Bufo*, especially so since the presence or absence of teeth can no longer be relied upon as a family character.

This being accepted, however, there is no longer a character, or combination of characters, by which one may separate these hitherto distinct families. For instance, as

* The larval stage also bears this out, for the tadpole of *C. sikkimensis* resembles that of *Pelobates* in a very marked degree.

Fry has pointed out, the sacral diapophyses (which in Pelobatidæ are supposedly "strongly dilated") may be hardly dilated at all—for example, in *Batrachopsis* it is not more developed than in *Heleioporus* of the Cystignathidæ, and certainly less so than in any of the Bufonid genera. The urostyle may be ankylosed with the sacrum, monocondylous or dicondylous as in the Bufonids. In fact, there is not a character in which the range of variation given for Pelobatidæ will not cover Bufonidæ also. It is impossible to draw a line between the two, now that the generic relationships and sequences are made clear and that there is no longer the gap which formerly separated them, and which is now so amply filled by *Cophophryne* and *Ophryophryne*.

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LXX.—*Nouvelles Observations sur quelques Echinides néogènes de l'île d'Anguilla.* Par JULES LAMBERT (Troyes).

[Plate IX.]

GRÂCE aux bienveillantes communications de Messrs. Gregory et Bather, j'ai pu donner en 1915 une note sur les "Echinides néogènes des Antilles anglaises," conservés dans les collections du British Museum (Mem. Soc. Acad. de l'Aube, t. lxxix. pp. 17-33, pl. iii.). Mr. Bather a bien voulu me communiquer les nouveaux matériaux, qui me permettent d'ajouter quelques observations sur les espèces miocènes de l'île d'Anguilla, et par voie de conséquence de compléter la liste des Echinides néogènes des Antilles. Je lui adresse tous mes remerciements pour les facilités ainsi accordées à mes études et pour l'accueil fait à mon modeste travail par sa haute compétence.